

Charles Bolden, NASA Administrator
Bradley University Mid-Year Commencement
Peoria, Illinois

December 15, 2012

Thank you, President Glasser for that gracious introduction and for the honor of addressing the Midyear Commencement of the Bradley University Class of 2012.

Please take a moment with me to remember the 20 students and 6 administrators and teachers at Sandy Hook Elementary School in Newtown, CT who were the tragic victims of a senseless shooting yesterday morning.

This is a special honor for me in several ways.

But the first real reason for my being here is in response to , a request of a mutual friend – former Illinois Congressman, current Secretary of Transportation, Peoria native, and Bradley grad, Ray LaHood.

Ray holds one of the most important positions in the Obama Administration. He's in charge of the planes, trucks, cars, and trains that will drive us in the opposite direction, away from the fiscal cliff. Transportation, including space flight, is critical to our economic recovery and America's future.

Being a Republican in a Democratic Administration, Ray reminds us that when we cross all the lines that would divide us and come together as one for the good of the country, we can do great things. So, I want to thank Ray for asking me to join you for this commencement ceremony and for giving me this opportunity to be a part of this critically important event in the lives of you in the Bradley Class of 2012.

The second reason I am thrilled to be here is that Bradley University has played a significant role in some of NASA's most important achievements.

As President Glasser reminded us, the first African American to be selected as a U.S. astronaut, Major Robert Henry Lawrence, Jr., was a 1956 chemistry graduate of Bradley University. While he never flew in space, Robert Lawrence tested some of the prototype aeronautical technologies that are now commonplace at NASA.

He lost his life during a 1967 training flight that helped lay the groundwork for the Space Shuttle and the International Space Station. I am proud that in 1997 his name was added to the Kennedy Space Center Space Mirror Memorial for astronauts who died in the line of duty.

There is even a more current NASA connection. In 2010, as a faculty fellow with NASA, Bradley engineering professor, Iqbal Shareef, helped determine how long a lubricant could help sustain the solar panels on the International Space Station.

Our folks were so impressed with Dr. Shareef's work that they asked him to return in the summer of 2011 to aid in experiments involving the James Webb Space Telescope.

Major Robert Lawrence, Professor Iqbal, and every Illinois-born astronaut and aerospace worker are all valued members of the NASA family.

Before I go any further, I want to join all of you in expressing our gratitude to a very special part of the Bradley University family -- the parents, grandparents, aunts, uncles, cousins, brothers, sisters and friends who have stood by you and helped you achieve this remarkable victory. Some of them have traveled great distances to be with you today. Let's give them all a round of applause.

I cannot tell you how proud I am of all of you for the extraordinary commitment and sacrifice you have made to make it to this day. I know it hasn't always been easy.

Some of you have had to overcome tremendous odds – financial, personal, and academic -- to get here today, but you made it and in the process you have given new life to the truth that education is the gateway to a better life for yourselves and our nation.

That is the path that brought me here today. My parents were career educators so a passion for learning and high expectations was instilled in me at an early age.

My parents also believed in the American Dream – they had no doubt that my future would be better than their past.

I just got back from a trip to Asia – landed at O'Hare in Chicago from Singapore just yesterday afternoon – and in my travels across this country and around the world, I find that students everywhere are excited about the future, as I hope all of you are. They are fired up about what lies ahead, for the chance to create capabilities that we don't have today.

They want to be a part of something larger and they want to contribute to national and even global goals.

There is a lot of opportunity and a lot of ways for you to contribute to the life of this country and also make the world a better place. I have three wonderful granddaughters, and I'm counting on you to help create that better world for them after I've done all that I can.

That is what I want to spend a few minutes talking with you about this morning: The incredible opportunity you have as students at this great University to build lives of purpose and meaning for yourselves, for your families, for your communities, and for our nation. I also want to let you know that as NASA launches itself into a new era of spaceflight and scientific discovery, there may be a place for you in America's growing aerospace industry if you prepare yourself well.

My journey began like yours – with an education that helped me expand my interests and knowledge about science, engineering, and aviation and with the example and the lessons of giving back and community service that were given to me by my parents, teachers, and mentors.

The Bradley family has a similar guiding star, in the person of your founder, Lydia Moss Bradley. In 1897, Mrs. Bradley turned her grief over the untimely deaths of her six children and her husband into building a school that would give its young students “the means to live an independent, industrious and useful life...”

Lydia Bradley understood something that is quite self-evident today – A college education must be about both expanding knowledge and expanding opportunity. When you walk out of here today, some of you will go on to grad school...some will go into the job market...some will go back to the jobs you already hold, but all of you have been prepared to lead and to take on the jobs of today and tomorrow.

I am especially impressed with this University's emphasis on science, technology, engineering, and math, or the STEM disciplines.

The remarkable partnership you have formed with Caterpillar, Inc. through the Caterpillar College of Engineering is exactly the kind of collaboration between higher education and corporations that is needed to move more college students from the classroom to the workplace and ensure America's technological leadership and economic growth in the 21st century.

We all know about the jobs crisis that has been plaguing our nation since the start of the Great Recession in 2007, but it is a little known fact that while 12 million Americans are unemployed, more than half-a-million manufacturing jobs are unfilled right now simply because companies can't find enough trained scientists, engineers and technicians to do the work.

All of this is occurring in a world where emerging economies are surging ahead and education has become the fault line between success and failure. Clearly this is an American crisis, but it is one we can solve.

President Obama has repeatedly stressed the importance of growing America's STEM workforce and has made it one of the highest priorities of his Council on Jobs and Competitiveness. The President has set a goal of recruiting, retaining, and graduating 10,000 engineers each year to maintain America's competitive edge.

As a government agency that is in the innovation business, NASA could not do the things we do without a strong and growing STEM workforce. That is why STEM education is the foundation of NASA's learning initiatives.

In FY 2011 alone, NASA's K-12 education projects reached more than one million students through STEM initiatives. An additional 4,000 college students benefited from the Agency's higher education projects through internships and fellowship opportunities.

At NASA, our needs for workers across aerospace in the coming decades will be great. The space program is soaring to new heights with new destinations on the horizon and new workers needed to advance aviation and space technology. A growing number of small and medium-size private companies are also coming aboard as the commercial space industry picks up steam.

On August 6th, NASA scientists and engineers completed the hardest mission in the history of robotic planetary exploration with the landing of a rover named *Curiosity* on the surface of Mars.

Carrying the most high-powered scientific capability of any ever sent to the surface of another planet, *Curiosity* is now seeking answers to one of humanity's oldest questions as it investigates whether conditions have favored development of microbial life on the Red Planet. This mission is a precursor to sending humans to the Red Planet in the 2030's.

In October, we saw the first successful contracted launch and mission to the International Space Station (ISS) by a private American company, SpaceX. We have entered a new era in scientific and human spaceflight. More U.S. companies are getting in the game and all of them will need STEM-educated workers.

The good news is that everywhere I go I meet young people like you who are eager to enter the STEM fields. The work we do at NASA everyday is focused on revealing the unknown so that what we do and learn will benefit all humankind. Bradley, Class of 2012, NASA needs you to fulfill that vision.

We need engineers to help us design the new rockets and capsules that will take us farther into the solar system than we've ever been.

We need scientists and researchers to help us develop materials to withstand the stresses of deep space exploration, to sustain humans for long duration stays in space, to make air transportation quicker, safer, and more efficient, and to aid us in our quest to unravel the mysteries of the cosmos and learn more about our own planet.

As NASA takes its next great leap into deep space exploration, we are determined that American workers and American companies lead the way. That means you Class of 2012! NASA needs you! America needs you!

Whatever field you choose to pursue, I offer the same advice that my wife Jackie and I have always given our two children: dream big dreams; do what you want to do; don't listen to anyone who tells you can't do something or you don't belong; know your stuff; know yourself; and don't let the opportunity to make a difference in your world pass you by.

“Do all you can

With what you have

In the time that you have

In the place that you are!”

- Nkosi Johnson, 2001

Bradley University Class of 2012 -- that is your mission and this is your moment. Go Braves!